

Applicant : Rourke, et al.
Appl. No. : 09/664,970
Examiner : Ho, Uyen T.
Docket No. : 702563.46

In The Claims:

1. (Previously Amended) An apparatus for delivering a prosthesis into a blood vessel of a patient, comprising:

an elongate tubular member having a proximal end, a distal end, and a lumen extending between the proximal and distal ends, the distal end having a size for endoluminal insertion into a blood vessel and terminating in a substantially atraumatic distal portion comprising a plurality of flexible leaflets integrally molded thereto, the leaflets being deflectable, without exposure to a softening liquid, from a closed position wherein the leaflets engage one another to an open position wherein the leaflets define an opening communicating with the lumen;

a tubular prosthesis disposed within the lumen proximate the distal portion; and

an elongate bumper member having a proximal end and a distal end, the bumper member being slidably disposed within the lumen of the elongate tubular member, the distal end of the bumper member having a blunt edge disposed adjacent the proximal end of the prosthesis for preventing axial displacement of the prosthesis upon retraction of the tubular member with respect to the bumper member;

wherein adjacent leaflets are connected to one another by weakened regions, the weakened regions being tearable upon retraction of the tubular member with respect to the prosthesis to allow the leaflets to be deflected towards the open position.

Claims 2-8 were previously cancelled.

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9. (Previously Amended) An apparatus for delivering a prosthesis into a blood vessel of a patient, comprising:

an elongate tubular member having a proximal end, a distal end, and a lumen extending between the proximal and distal ends, the distal end having a size for endoluminal insertion into a blood vessel and terminating in a substantially atraumatic distal portion comprising a plurality of flexible leaflets integrally molded thereto, the leaflets being deflectable, without exposure to a softening liquid, from a closed position wherein the leaflets engage one another to an open position wherein the leaflets define an opening communicating with the lumen;

a tubular prosthesis disposed within the lumen proximate the distal portion; and

an elongate bumper member having a proximal end and a distal end, the bumper member being slidably disposed within the lumen of the elongate tubular member, the distal end of the bumper member having a blunt edge disposed adjacent the proximal end of the prosthesis for preventing axial displacement of the prosthesis upon retraction of the tubular member with respect to the bumper member;

wherein the leaflets include a portion having a thickness that is substantially thinner than a wall thickness of the distal portion of the tubular member from which the leaflets extend.

10. (Previously Amended) An apparatus for delivering a prosthesis into a blood vessel of a patient, comprising:

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an elongate tubular member having a proximal end, a distal end, and a lumen extending between the proximal and distal ends, the distal end having a size for endoluminal insertion into a blood vessel and terminating in a substantially atraumatic distal portion comprising a plurality of flexible leaflets integrally molded thereto, the leaflets being deflectable from a closed position wherein the leaflets engage one another to an open position wherein the leaflets define an opening communicating with the lumen;

a tubular prosthesis disposed within the lumen proximate the distal portion; and

an elongate bumper member having a proximal end and a distal end, the bumper member being slidably disposed within the lumen of the elongate tubular member, the distal end of the bumper member having a blunt edge that engages the proximal end of the prosthesis for preventing axial displacement of the prosthesis upon retraction of the tubular member with respect to the bumper member;

wherein the bumper member comprises a helical coil.

11. (Previously Amended) An apparatus for delivering a prosthesis into a blood vessel of a patient, comprising:

an elongate tubular member having a proximal end, a distal end, and a lumen extending between the proximal and distal ends, the distal end having a size for endoluminal insertion into a blood vessel;

a tubular prosthesis disposed within the lumen proximate the distal end; and

an elongate bumper member comprising a helical coil having a proximal end and a distal end, the bumper member being slidably disposed within the lumen of the elongate

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tubular member, the distal end of the bumper member having a blunt distal edge that engages the proximal end of the prosthesis for preventing axial displacement of the prosthesis upon retraction of the tubular member with respect to the bumper member.

12. (Original) The apparatus of claim 11, wherein the tubular member comprises a substantially atraumatic distal portion comprising a plurality of flexible leaflets integrally molded thereto, the leaflets being deflectable from a closed position wherein the leaflets engage one another to an open position wherein the leaflets define an opening communicating with the lumen.

13. (Original) The apparatus of claim 12, wherein the leaflets define a substantially rounded bullet shape in the closed position.

14. (Original) The apparatus of claim 12, wherein the leaflets are substantially flexible and independently deflectable at a temperature less than body temperature.

15. (Original) The apparatus of claim 12, wherein the leaflets are biased towards the closed position, but are resiliently deflectable to the open position.

16. (Original) The apparatus of claim 11, wherein the bumper member comprises a helical wire compression coil extending between its proximal and distal ends.

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17. (Original) The apparatus of claim 11, wherein the bumper member comprises a plastic bumper element extending from a distal end of the helical coil. the bumper element including the blunt distal edge thereon.

18. (Original) The apparatus of claim 17, wherein the bumper member further comprises an extension element extending from the bumper element, the extension element having a cross-section substantially smaller than the bumper element, whereby the extension element may extend through the prosthesis disposed within the lumen of the tubular member.

19. (Original) The apparatus of claim 18, wherein the extension element comprises a lumen for receiving a guidewire therethrough.

20. (Original) The apparatus of claim 11, further comprising a radiopaque marker on the distal end of the bumper member.

Claims 21-36 were previously cancelled.

37. (Previously presented) The apparatus of claim 12, wherein adjacent leaflets are connected to one another by weakened regions, the weakened regions being tearable upon retraction of the tubular member with respect to the prosthesis to allow the leaflets to be deflected toward the open position.

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Claim 38 was previously cancelled.

39. (Previously presented) The apparatus of claim 12, wherein the leaflets include a portion having a thickness that is substantially thinner than a wall thickness of the distal portion of the tubular member from which the leaflets extend.

Claims 40-41 were previously cancelled.